

CAUTION

RADIOACTIVE MATERIALS
HANDLING AREA



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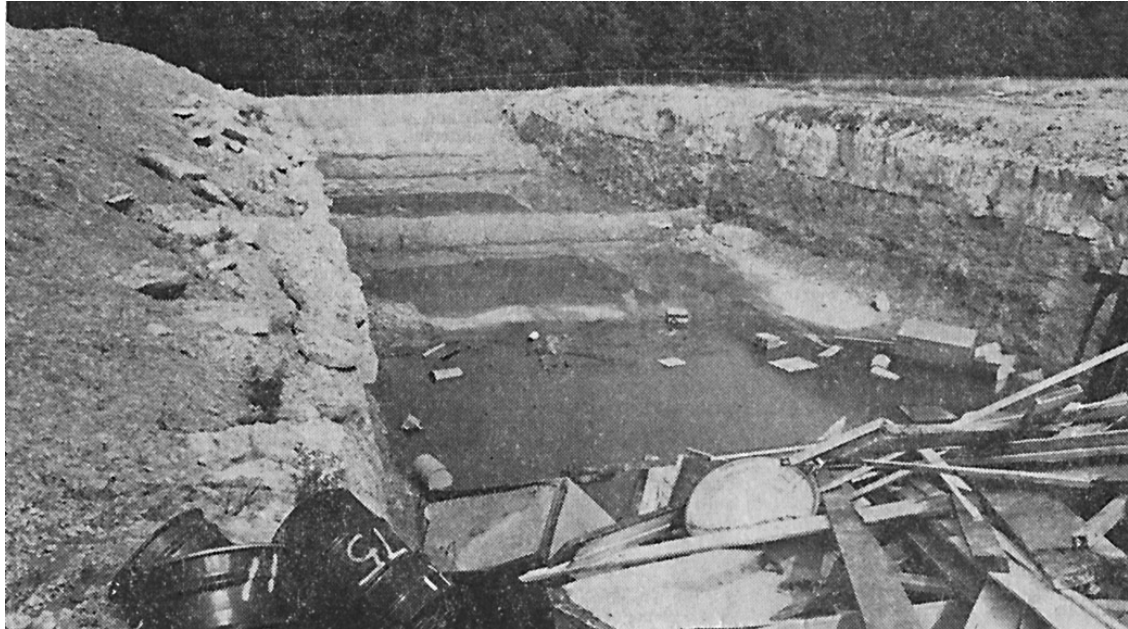
MAXEY FLATS: PUBLIC MEETING AND TOUR



May 31, 2002
Environmental Quality Commission

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Maxey Flats: History of the Site

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One of the 46
unlined burial
trenches at
Maxey Flats
Low-Level
Radioactive
Waste site.
1975 photo -
The Courier-
Journal and
Times

Maxey Flats began operations in 1963 as an economic development project that was supposed to attract the nuclear industry to Kentucky by giving it a convenient place to dump its waste. Approximately 6 million cubic feet of low-level radioactive waste is buried at the Maxey Flats landfill. The waste was generated and shipped to the site by more than 600 sources including nuclear power plants, hospitals, universities and industries. In 1976 the **Environmental Quality Commission** voted to recommend the closing of the site due to the potential danger of contamination and threats posed by radionuclides to public health and the environment. The state closed the 280-acre site in 1977 after studies showed that radioactive water had leaked from closed trenches to other areas of the site.

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Maxey Flats: Impacted Population

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A fence will be built around the perimeter of the 60-acre "Restricted Area." EQC expressed concern about public access to the site and its 537 acre buffer zone. No warning signs are planned in the buffer zone and no guard is on duty.

The site is located on a spur of **Maxey Flats**, a ridge 300 feet above the surrounding stream valleys. The spur drops steeply on three sides, and rainwater runoff is channeled to nearby Rock Lick Creek, which feeds the Licking River. A sixty-acre "Restricted Area" is situated entirely on top of the flats and encompasses the disposal trenches and "hot wells" (sealed concrete pipes containing high activity radionuclides). The area surrounding the site is rural and agricultural. More than 300 people live within a five mile radius of the "Restricted Area;" the closest residence is within 1/4 mile. The Commonwealth of Kentucky acquired 537 acres around the site which now totals 900 acres. More than 120 wells and 25 springs are situated within five miles of the site; however, nearby residents now receive household water from a municipal water system.

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Maxey Flats: Who is Responsible

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Dr. John Volpe, a radiation specialist with the Ky. Cabinet for Public Health Services has been monitoring the site. He told EQC that the state will be solely responsible for the site in 10 years.

The **Maxey Flats** Radioactive Waste Site was declared a federal Superfund site by the U.S. Environmental Protection Agency (EPA) in 1986. In 1995, the U.S. Department of Justice and the U.S. EPA entered into a consent decree with 400 private and government parties to stabilize and minimize further pollution from the Maxey Flats Radioactive Waste Site at an estimated cost of \$60 million. Under one decree, 43 companies were ordered to remove approximately 3 million remaining gallons of water from waste burial trenches and install an interim cap. Six federal agencies will pay for a majority of this work, estimated to cost \$45 million. Kentucky will also maintain the interim cap and eventually build a final cap to prevent water from entering the trenches permanently. The EPA will oversee the cleanup and maintenance work. The private parties and federal agencies agreed to pay \$5 million of EPA's past response costs. In a second consent decree, state, federal, and private parties agreed to pay \$8.5 million toward the cleanup and for past response costs.

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Maxey Flats: Pollutants of Concern

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One of 24
solar-powered
groundwater
monitoring
wells around
the site. The
principal
pollutant
detected in
groundwater
is radioactive
tritium.

The **Maxey Flats** site contains a major inventory of radionuclides such as strontium-90, cobalt-60, cesium-137, iodine-129 and tritium. Radionuclides are classified as Class A human carcinogens. Because of the long-lived nature of some of the radionuclides disposed at the site the time period for these materials to decay is thousands of years. The state is charged with monitoring land, air, and water at the site. During 2001 1,500 water samples were collected from 19 groundwater wells adjacent to the restricted area and 14 newly installed monitoring wells in the valley alluvium to the west, south, and east of the site. Analyses of groundwater and surface water samples included cobalt-60, cesium-137, strontium-90, tritium, carbon-14, isotopes of uranium, and isotopes of plutonium. The most common radionuclide detected in the environmental media is tritium. Other pollutants detected include cobalt-60, carbon-14 and strontium-90. Sampling has found yearly average tritium levels off-site below the U.S. EPA drinking water standard of 4 millirem per year. For more information about radiation see <http://www.epa.gov/radiation/index.html>

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Maxey Flats: Cleanup Status

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Part of the remedy at Maxey Flats included removing radioactive leachate from the disposal trenches. The waste was solidified and disposed of in concrete bunkers constructed at the site (1999 photo).

An investigation and study of the **Maxey Flats** site was initiated in 1987 and completed in 1991 under an Administrative Order. A remedy was finalized by the U.S. EPA in 1991 which primarily consisted of stabilizing the waste in place and minimizing further pollution. Meanwhile, between 1988 and 1989, the U.S. EPA solidified 286,000 gallons of tanked leachate because of significant leakage from the metal leachate tanks. The solidified leachate blocks were disposed in an underground on-site trench and installed 30-acres of temporary above-ground plastic, impermeable liner to prevent infiltration of rain into the waste trenches. In 1996 construction began on reinforced concrete bunkers for disposal of the solidified radioactive leachate and other contaminated materials. Approximately 900,000 gallons of leachate (radioactive contaminated trench water) and have been removed from within the trenches since current dewatering operations began in September 1998. Dewatering operations were discontinued in early fall 2000.

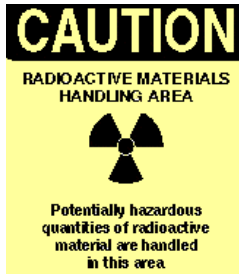
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Maxey Flats: Cleanup Status

A 60-acre synthetic cap is currently being constructed over the site. The cap should last 20 years. Articulated block has been placed in drainage areas to slow down water running off the site. A final cap will be constructed in 100 years.

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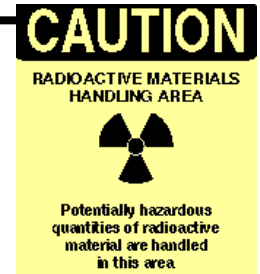
Construction of a 60-acre synthetic interim cap and associated surface water and erosion controls is currently underway at the **Maxey Flats** Superfund site. These construction efforts are scheduled to be completed by the end of 2002. Following completion, the Commonwealth of Kentucky will implement an extended maintenance plan that may last up to 100 years to allow natural stabilization before a final cap is constructed. Responsible parties will be required to address any problems found at the site during the next 10 years. In 2012 site maintenance, monitoring and institutional controls will be the sole responsibility of the Commonwealth of Kentucky in perpetuity. The U.S. EPA will hold a public meeting and tour of the site in the fall of 2002. For more information about the meeting contact Derek Matory, U.S. EPA, 404-562-8800, email - matory.derek@epa.gov



Maxey Flats: EQC Recommendations



EQC Commissioners toured the Maxey Flats site. Several recommendations were made including the need to test fish in nearby streams for radionuclides.



EQC noted that only time will tell if the remedy at **Maxey Flats** will adequately protect public health and the environment and contain the tons of radioactive materials buried at the site. In a letter to Gov. Patton, EQC urged the state to remain vigilant in its maintenance and monitoring of the Maxey Flats Superfund site.

The commission also recommended the following actions:

- At least one public meeting be held by the state and the U.S. EPA each year for the next 10 years.
- Informational fact sheets be produced by the state every 6 months and a Maxey Flats web site be established to update local officials and the public on the status of the Maxey Flats site.
- Fish tissue testing for radionuclides be conducted by the state in Rock Lick Creek, Drip Springs, Fox Creek and Licking River and the results of this testing be provided to the public.
- The state monitor the forest ecosystem around the site due to the importance of the forest buffer zone to take up pollutants and control erosion from the site.
- A fire protection plan for the site and the adjoining forestland be prepared.
- An emergency response plan for the site be prepared.
- The state take the steps necessary to limit public access to the 900-acre site and prevent vandalism.
- The holding pond at the site be cleaned out and steps be taken to prevent future siltation of the pond.
- A study be conducted by the state to determine the potential risks at site posed by seismic activity. Based on the results of this study, the need for the development of contingency plans can be determined.